

REPORT
OF
PROCEEDINGS

UNDER

THE FERTILISERS AND FEEDING
STUFFS ACT, 1906,

FOR THE YEAR

1908-9.

Presented to both Houses of Parliament by Command of His Majesty.



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To

HIS EXCELLENCY JOHN CAMPBELL, EARL OF ABERDEEN,
Lord Lieutenant-General and General Governor of Ireland.

MAY IT PLEASE YOUR EXCELLENCY,

I am directed by the Vice-President to submit to Your Excellency the Report of Proceedings under the Fertilisers and Feeding Stuffs Act, 1906, for the year ended 30th September, 1909.

I have the honour to remain,

Your Excellency's faithful Servant,

T. P. GILL,
Secretary.

DEPARTMENT OF AGRICULTURE
AND TECHNICAL INSTRUCTION FOR IRELAND,
UPPER MERRION STREET,
DUBLIN, 8th March, 1910.

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DUBLIN CASTLE,
9th March. 1910.

SIR.

I have to acknowledge the receipt of your letter of the 8th instant, forwarding, for submission to His Excellency the Lord Lieutenant, the Report of Proceedings under the Fertilisers and Feeding Stuffs Act, 1906, for the year ended the 30th September, 1909

I am,

Sir,

Your obedient Servant,

J. B. DOUGHERTY.

The Secretary,
Department of Agriculture,
and Technical Instruction
for Ireland,
Dublin.

DEPARTMENT OF AGRICULTURE AND TECHNICAL
INSTRUCTION FOR IRELAND.

PROCEEDINGS UNDER THE FERTILISERS AND
FEEDING STUFFS ACT, 1906.

STATEMENT FOR THE YEAR ENDED 30th SEPTEMBER,
1909.

The Fertilisers and Feeding Stuffs Act, 1906, which came into operation on 1st January, 1907, was intended to safeguard the interests of the farming community in the purchase of these important commodities, but, owing to the peculiar conditions which prevail in Ireland, it has not been availed of to any great extent by farmers in this country.

The Department, however, by the exercise of the special powers conferred upon them under the Act, have been able to investigate to some extent the condition of the trade in artificial manures and feeding stuffs in Ireland.

The following report shows the provision which has been made for the analysis of manures and feeding stuffs, as well as for the sampling of these articles, and contains a summary of the Department's operations under the Act for the year ended 30th September, 1909.

I.—APPOINTMENT OF ANALYSTS.

Section 2 (2) of the Act requires the appointment by the several County Councils of Agricultural Analysts for their respective counties, but in the case of County Boroughs such appointments are optional. These appointments are subject to the approval of the Department. Samples taken in a County Borough, the Council of which have not appointed an Agricultural Analyst, may be sent for analysis to the analyst appointed for the County in which, for the purposes of the Local Government Act, 1898, such Borough is deemed to be situate (*vide* Fertilisers and Feeding Stuffs Regulations, No. 2, 1907).

It has not, as a rule, been necessary for County Councils to make any new appointments of this kind, as it was provided by Section 13 of the Fertilisers and Feeding Stuffs Act, 1906, that every appointment made under the 1898 Act should have effect as if made under the present Act, and, consequently, persons

who, on the 1st January, 1907, held the position of District Analyst for counties or county boroughs became the Agricultural Analysts for such counties or boroughs.

Only one vacancy occurred during the past year and it has been duly filled.

In order that farmers may be encouraged to avail themselves of the protection afforded to them under the Act by having samples of manures and feeding stuffs analysed it is desirable that each County Council should make arrangements whereby in consideration of a certain annual sum, payable by the Council, the analyst would undertake such analyses for residents in the county at reduced fees. The Department have recently made representations to nearly all the County Councils on this subject, and in many counties provision has now been made for the analysis at cheap rates of samples submitted by farmers.

A return giving the name and address of the Agricultural Analyst for each county and county borough, and particulars of any special arrangements made for analysis at reduced charges, will be found at page 20 of the appendices.

The Department have not yet exercised their powers under Section 4 (c) of the Act to make regulations as to the manner in which analyses are to be performed. The matter has, however, received careful attention, having been the subject of correspondence between the Department and the Board of Agriculture and Fisheries, and it is hoped that the Department will shortly be in a position to issue regulations prescribing certain methods of analysis.

II.—APPOINTMENT OF OFFICIAL SAMPLERS.

With a view to exercising the power conferred upon them by Section 12 of the Act, the Department have appointed a number of Official Samplers, whose duty it is to take samples of fertilisers and feeding stuffs on behalf of the Department. As it is desirable that the persons appointed to this position should not be interested in any trade, manufacture, or business connected with the sale of articles used for fertilising the soil, or as food for cattle or poultry, the Department have confined the appointments in question to their Agricultural Inspectors, and to the Itinerant Instructors in Agriculture employed in connection with agricultural schemes in operation in the various counties.

In this connection it should be stated that the majority of the local authorities, having regard to the action taken by the Department in the matter, have not considered it necessary to appoint special samplers for their respective counties or boroughs. In a few cases, however, where the local authorities have made appointments they selected for the post the Agricultural Instructor. Thus, in some instances the Instructor acts as Official Sampler for both the Department and the local authority.

A list of official samplers is given at page 22 of the appendices.

Reference should here be made to the important decision given this year in the High Court of Justice, King's Bench Division,

in the case of *The Department of Agriculture and Technical Instruction for Ireland and Hugh Kennedy, Complainants and Respondents, v. The City of Cork Steampacket Co., Defendants and Appellants*. Proceedings were instituted in the first instance by the Department in the Cork Police Court, May, 1908, with the result that the Defendant Company were convicted of the offence of having unlawfully refused to permit Hugh Kennedy, a duly appointed official Sampler of the Department, to take for the purposes of analysis, samples of manures and feeding stuffs which had been entrusted to them for conveyance to this country and which were lying in their stores on Penrose Quay at Cork. On making the conviction the Magistrate imposed fines amounting to Twenty Shillings and costs. Defendants duly appealed, and the appeal came on for hearing before the Recorder of Cork at Cork Borough Trinity Quarter Sessions, 1908. The Recorder, while holding that the Defendant Company, by their Secretary, refused to permit the Complainant, Hugh Kennedy, to take samples of the articles in question for the purpose of analysis, was of opinion that Hugh Kennedy was not an Official Sampler under Section 8, sub-section (a) of the Act, entitled to be allowed to take such samples, and that the Defendant Company being in possession of the goods solely as carriers, and for the purpose of transit only, were not persons entrusted for the time being with the charge or custody of an article sold or intended to be sold within the purview of the same Section. He, accordingly, allowed the appeal, reversed the order of the Justices, and dismissed the complaint, with Forty Shillings costs. A Case Stated was subsequently submitted for the decision of the High Court, in which the following questions were raised, viz.:—(1) Was the Complainant, Hugh Kennedy, an Official Sampler within the meaning of Section 8 of the Act, and (2) were the Defendant Company persons entrusted for the time being with the charge or custody of an article sold or intended to be sold within the meaning of that Section. The Court unanimously answered both questions in the affirmative.

During the year under review 418 samples of fertilisers and 258 samples of feeding stuffs were drawn by official samplers, of which 235 fertilisers and 142 feeding stuffs were analysed by the Department.

A return showing the number of samples taken by the official samplers resident in each county will be found at page 23. It will be seen from this return that consignments of manures and feeding stuffs were sampled in almost every county, and it is believed that with such a system of sampling in operation the sale of adulterated and inferior articles in this country cannot escape detection.

III.—VALUATION OF MANURES.

During the past season the Department, for the first time, issued a schedule of unit values for manures, a copy of which will be found at page 24 of the appendices. This was widely distributed, and was much appreciated by farmers, as it enabled them to calculate for themselves the approximate commercial value of a manure from its guaranteed analysis. There is abundant evidence that the publication and use of this schedule have put a stop to

the sale of inferior and costly fertilisers in many districts. On the other hand, the schedule has been of much benefit to those who are manufacturing a first class article, the sale of which has been thereby encouraged and increased.

It is proposed to issue a similar schedule early next season, copies of which, when published, may be obtained free of charge on application to the Department.

IV.—INSTRUCTION FOR SHOPKEEPERS AND OTHERS DEALING IN MANURES AND FEEDING STUFFS.

The Department, realising that local shop-keepers in stocking inferior manures and feeding stuffs had often acted in ignorance, addressed a circular letter to every manure agent and retailer in Ireland, appealing to them to give special attention to their business in these commodities, and offering to provide short courses of instruction for those desiring to acquire a knowledge of the composition, use, and methods of valuing such articles, as well as of the law relating to the sale of these goods. A memorandum accompanied the circular in question, giving particulars of the manures recommended by the Department for the various farm crops, as a result of the large number of field experiments carried out by them during the past few years.

Copies of the circular and memorandum will be found at pages 29 and 30 of the appendices.

Numerous applications for courses of instruction were received after the issue of this circular, but, owing to the fact that only in a few instances did the applicants reside in districts near to one another, the Department found it difficult to organise classes at centres which would be convenient to all. A few classes, however, were held and were greatly appreciated by those who attended.

The Department are pleased to observe an increasing desire on the part of traders throughout the country to sell at a reasonable profit manures and feeding stuffs of good quality, such as can be recommended by the local Agricultural Instructors.

V.—FERTILISERS.

Of the 235 samples of artificial manures analysed by the Department last season, invoices and full particulars were given in the cases of 202, and of these 109 (i.e., 54 per cent) were found to be up to guarantee; 53 (i.e., 26 per cent.) were found to be deficient within the limits of error allowed under the Fertilisers and Feeding Stuffs Regulations, 1907; and 40 (i.e., 20 per cent.) were found to be deficient beyond the limits of error.

It is regretted that space does not permit of the publication of particulars of all the samples analysed, but a selection, which may be taken as representative of all the manures tested, has been made, and the results of the analyses of these samples are given at page 32 of the appendices. The figures, which speak for themselves, will be of interest to those who contemplate the purchase of artificial manures next season.

In every case in which a sample of manure was found on analysis to be below the composition guaranteed by the vendors, steps were immediately taken to investigate the matter, and, where the Department were satisfied that no fraud was intended, representations were made to the manufacturers with a view to getting them either to improve the quality of their goods or to sell them on a guarantee in accordance with their analysis. The following instances may be quoted as illustrating the nature of the cases dealt with in this manner, and the action taken by the manufacturers as a result of the Department's representations:—

(a) Samples taken from a consignment of a special potato manure lying in stores were found on analysis to be considerably below the guaranteed composition in respect of nitrogen, the deficiency in this ingredient amounting to nearly 1 per cent., and representing a loss of about 14/- per ton to the purchaser. The local vendors and manufacturers were accordingly written to, and, after some correspondence, the latter had the stuff withdrawn from sale and returned to the works.

(b) This was a similar case, a deficiency of about the same extent occurring in the content of potash in a potato manure. Similar procedure was adopted by the Department with the result that the manufacturers agreed to sell the manure at a lower price on a guarantee revised in accordance with the results of the analysis.

(c) Samples of certain corn and barley, and potato manures were found to be below their guaranteed composition. Representations were made to the manufacturers, in consequence of which the consignments were recalled to the works and replaced by other lots which had been ascertained to be up to guarantee.

Where, however, there were reasonable grounds for suspecting that the manufacturers or vendors of manures, which proved on analysis to be seriously below their guaranteed composition, might be acting with intent to defraud, or were guilty of gross negligence, the Department did not hesitate to give their consent to the institution of criminal proceedings under the Act.

Basic Slag.

Only a few instances came under notice during the past season of inferior qualities of this manure being imported into Ireland, and it would appear that the trade in low grade slag manufactured on the Continent, which was so extensive up to a year or two ago, had now almost entirely ceased. The Department in November, 1907, and again at the beginning of last season, issued leaflets advising farmers in regard to the purchase and use of this fertiliser. In these leaflets it was pointed out that the value of basic slag depended on three things and *three only*, i.e., (1) the total percentage of phosphate of lime contained, (2) the percentage of that phosphate of lime which is soluble in a two per cent. solution of citric acid, and (3) the fineness of grinding. Farmers

were advised, when obtaining quotations, to insist on being supplied with figures referring to each of these points, and when giving their orders to demand an invoice on which these figures would be clearly stated as a guarantee. They were further warned not to be misled by plausible statements as to other constituents in slags, and not to accept low grade slags or those of low solubility, which, though they may be offered at a lower price, are, nevertheless, relatively dearer than those of high grade and higher solubility. As a result of the circulation of these publications, and of similar advice given by the Agricultural Instructors, in the course of their lectures and correspondence, farmers are now, as a rule, in a better position to judge for themselves as to the value of the slags offered to them. Consequently, it was found that the trade in this fertiliser was almost exclusively confined to the products of several well-known British firms, which were generally found to be up to the guaranteed standard of quality, solubility and fineness.

The Department's consent to the institution of proceedings under the Act was asked for in several instances by trading firms in Ireland, and was given in two cases after the former had investigated the circumstances of each case, and were satisfied that the manufacturing firms were guilty of at least gross carelessness. In the first case a Dublin importer purchased from a Liverpool firm a 50 ton lot of basic slag, guaranteed to contain 84 per cent. phosphate of lime all soluble in a solution of 2 per cent. citric acid. Samples were taken from the consignment, and on analysis were found to be below guarantee, the Chief Analyst's certificate showing the content of citric soluble phosphates to be but 26.4 per cent. On the hearing of the case a fine of £20 and £10 costs was imposed. The defendants relied solely on the provisions of Section 6 (b) (I.) and (II.) of the Act, but were unable to satisfy the magistrate that they could not with reasonable care have ascertained that the slag was inferior.

In a similar instance, which occurred about the same time as the last-mentioned case, a Galway trading firm applied for the Department's consent to the institution of proceedings against the same manufacturing firm. It appeared, however, that the necessary sampling was not performed within the ten days limit prescribed under Section 3 (2) of the Act, and the Department were in consequence compelled to withhold their consent. Some correspondence took place subsequently between the purchaser and the vendors, and, as a result, the latter agreed to amend their invoice in accordance with the analysis, and to grant the purchaser a corresponding rebate.

Early last winter the Department became aware that orders were being taken extensively, particularly in the south of Ireland, for supplies of a slag of very inferior quality. Advertisements and circulars issued in regard to this particular brand were worded in such a manner as to lead an unwary purchaser to believe that it contained a large quantity of valuable fertilising ingredients. Close perusal, however, of these publications revealed that the slag in question was guaranteed in fact to contain only about 7½ per cent. soluble phosphates, and, consequently, was a very inferior article. The Department issued a

poster, a copy of which is given at page 31 of the appendices, and had it displayed at all police stations throughout the country warning farmers against the purchase of such inferior slag. Samples were also taken in various districts and tested, but were found to be generally up to the low standard guaranteed. In one case samples taken from a consignment of ten tons supplied to a Dublin trader were found to be below guarantee, and the latter applied for and obtained the Department's consent to the institution of proceedings against the manufacturer. The Regulations in regard to the giving of notice of intention to take samples, and as to the time limits within which samples should be drawn, not having been fully complied with the case was dismissed on these technical points. One of the Department's Inspectors in giving evidence in the case, however, was afforded an opportunity of stating his opinion as an expert on the worthlessness of the slag in question for agricultural purposes, and as the proceedings were fully reported in farming and other papers it is to be hoped that this warning will not be without its effect.

Superphosphate.

The attention of the Department was directed to a case in which a consignment of the above fertiliser, supplied to a farmer in County Londonderry, and guaranteed to contain 88 per cent. soluble phosphates, was found on analysis to be considerably below this standard. A quantity of the manure was accordingly purchased by an official sampler on behalf of the Department. Notice of intention to take samples was given to the vendors and all the prescribed regulations incidental to the institution of proceedings were complied with; it was found, however, that the manure supplied in the second instance was up to the above guarantee. Proceedings could not in the circumstances be taken, and the only course open to the Department was to make representations to the vendors on behalf of the farmer to whom the first consignment was delivered.

On investigation it transpired that the manufacturers in question were enabled, by the exceptional raw materials which they commanded, to put on the market quantities of superphosphate containing this unusually large percentage of soluble phosphates. The Department satisfied themselves that no fraud was intended in respect of the first consignment, and that some unexplainable error had arisen in the course of manufacture. The vendors readily agreed to grant to the purchaser in the first instance a substantial rebate on a basis fixed by the Department, and it may be expected that greater care will be exercised by them in future to ensure that all shipments sent out from their works will be up to their guaranteed standard.

A few large consignments of superphosphate were imported into Ireland from Belgium and Germany this year, and sold in bags bearing the XXX brand which has come to be regarded amongst farmers as implying a content of 85 per cent. soluble phosphate. This manure being offered at a cheaper rate than that at which superphosphate of the same quality could be

put on the market by the home manufacturers, there was reason to suspect the quality of the article, and the Department, accordingly, detailed an officer specially to inquire into the matter and to obtain samples in the districts in which the manure was being most widely distributed. Samples drawn from small lots purchased locally by this officer were tested and found to be below the 35 per cent. standard. The vendors, however, had allowed for a wide margin of error by stating on the invoices given that the content of soluble phosphates was 34-37 per cent. and the deficiency on the minimum of this guarantee was thus brought within the limits of error prescribed by the Fertilisers and Feeding Stuffs Regulations. The vendors were, therefore, communicated with, and it was pointed out to them that the description given on the invoices, viz., "XXX Super, 34-37 per cent.," did not comply with the requirements of Section 1 (1) of the Act, which makes it obligatory on the part of the vendor to state the *actual* not *approximate* percentage of soluble phosphates contained in the article, and they were warned that failure on their part to give proper invoices in future would lead to prosecution. The vendors were further notified that, in the opinion of the Department, it is a serious misrepresentation, having regard to the custom of the trade in Ireland, to brand as XXX any superphosphate which does not contain at least 35 per cent. soluble phosphates.

Muriate of Potash.

Early in the spring of this year the Department became aware that quantities of muriate of potash of an unusual nature were being sold in various districts, particularly in the North of Ireland. Upon the analysis of samples procured from several centres it was ascertained that, while the muriate in most cases contained potash to the extent guaranteed by the vendors, there were also present in varying quantities carbonates and cyanides which rendered it objectionable for certain purposes. For instance, when mixed with sulphate of ammonia in equal quantities in the preparation of a potato manure, the effect of the chemical action of these carbonates on the sulphate of ammonia was to release about 3-7 per cent. of the total nitrogen in the latter manure. This, in a sulphate of ammonia of normal composition, and containing about 20 per cent. nitrogen, would represent a loss of 10s. 6d., approximately, per ton of muriate of potash used. Owing to the fact, however, that the consignments of this muriate of potash purchased on behalf of the Department, with a view to the institution of proceedings under the Fertilisers and Feeding Stuffs Act, proved on examination to be of the guaranteed composition (50 per cent. potash) they were advised that no action would in consequence lie against the vendors under the above Act.

The Department then approached the principal agents for the importation of this manure into the country and pointed out their objections to the sale of this material for agricultural purposes, and stated that if traders persisted in selling it for

such they would be obliged to take proceedings under the Merchandise Marks Act. The agents then gave the Department a written undertaking to the effect that they would take every precaution to ensure that all muriate of potash sold by them for agricultural purposes should be free from carbonates.

It transpired in the course of the inquiries instituted by the Department in Great Britain and on the Continent in connection with the production and sale of this manure that it is not obtained from the usual sources of supply of potash.

Blood Bone and Meat, and Similar Compound Manures.

For the past few years the County Agricultural Instructors have been advocating in the course of their lectures and visits to farmers the advisability of using the high grade artificial manures which modern scientific methods place at their disposal. In many instances the effect of this advice was nullified by the efforts of unscrupulous travelling agents of certain manure manufacturers, who, followed in the wake of the Instructors, and, by wilful misrepresentation of the value of the manures sold by them as well as by untruthful statements as to well-known agriculturists in the district using their compounds, induced farmers to purchase quantities of manures sold under such titles as "Blood and Bone Manures," "Blood Bone and Meat Compound," etc. The worthless nature of these so-called fertilisers may be gauged from the remarks of the Department's Analyst in regard to some samples of such examined by him, in the course of which he states that "these samples are composed of all kinds of refuse, rags, bones, cord, cabbage leaves, hair, etc." Exorbitant prices were charged for this rubbish, and many farmers, after trial of such, and consequent disappointment with results, were led to believe that the use of artificial manures was a costly failure, and were disposed to view other recommendations of the Instructors in an equally unfavourable light.

Owing, however, to the efforts of the Department to expose these unscrupulous and fraudulent dealings, and to the increased use by farmers of compound manures prepared according to the Department's recommendations, and which can now be obtained at reasonable prices from any of the well-known manure manufacturers in Ireland, it is satisfactory to be able to report that the trade in these worthless compounds has practically ceased in this country. One case occurred during the period under review which will serve to illustrate the methods adopted in pushing the trade in manures of this description. An agent for the sale of a "Blood and Bone Compound Manure" manufactured in Liverpool appeared in several counties at the beginning of the season and induced numerous farmers to give orders for supplies of this compound. In many cases when pushing the sale of his wares he showed to his prospective customer a small quantity of a finely ground manure of a grayish appearance, which he represented to be a sample of the Blood and Bone Compound. He also convinced many undecided purchasers of the advisability of trying this particular manure by mentioning the names of well-known and

influential farmers in the district, who, he stated, had given extensive orders for supplies of the material. When the consignments were duly delivered and were found to be coarsely ground and of a dark colour, totally different from the sample shown by the traveller, the purchasers' suspicions were aroused, and when, on making inquiries, it was discovered that the agent's statements as to the purchase of the manure by leading farmers were entirely without foundation, no doubt was left in their minds as to the nature of the deception that had been practised upon them. In one county the Agricultural Instructor, on becoming acquainted with the facts of the case, convened a meeting of the aggrieved purchasers for the purpose of collecting evidence and deciding on some joint course of action in the matter. After full discussion, and on being shown by the Instructor that the value of the manure, calculated on the basis of the unit values fixed by the Department, was less than half the price charged for it, the farmers present decided to act jointly in refusing to accept delivery of the manure. A Director of the manufacturing firm who came specially to investigate the case was met by the Instructor and other representatives of the farmers, and, on being shown in detail the tactics adopted by the firm's traveller, was forced to admit the charges of misrepresentation. He, accordingly, offered to let the purchasers have the manure at a considerably reduced price; some agreed to accept his terms, but the majority declined to take the manure on any conditions.

Similar action was taken by the Agricultural Instructor in an adjoining county with the result that the vendors agreed to accept payment from the purchasers at the amount calculated by the Instructor as being a fair charge. This amount was considerably less than half the price originally asked for by the manufacturers.

VI.—FEEDING STUFFS.

Section 1 (2) of the Act requires the giving of an invoice stating the percentages of oil and albuminoids contained in the article sold only in the case of those feeding stuffs that have been artificially prepared, otherwise than by being mixed, broken, ground or chopped. Consequently, whilst the guaranteed composition was stated in regard to almost every sample of artificial manure analysed by the Department during the year, this was not found to be the case in respect of the feeding stuffs tested. This matter is dealt with at length under the heading of "Invoices" in this report.

Of the 142 samples of feeding stuffs analysed by the Department during the past season the guaranteed composition was stated in 79 instances.

Of the latter 35 (i.e., 44.3 per cent.) were found to be up to guarantee; 28 (i.e., 35.4 per cent.) were found to be deficient within the limits of error allowed in the Fertilisers and Feeding Stuffs Regulations, 1907; and 16 (i.e., 20.3 per cent.) were found to be deficient beyond the limits of error.

A selection, representative of the articles thus tested, together with the results of analysis in each case will be found at page 34 of the appendices.

The same procedure as has been outlined in the case of the fertilisers was adopted by the Department in regard to the feeding stuffs that were found to be under guarantee.

Whilst the result of their investigations would go to show that in some respects there is an improvement in the quality of the feeding stuffs that are now being offered for sale in this country, as compared with the quality of those sold a few years ago, much still remains to be done before it can be said that the trade in these commodities is in a sound and satisfactory condition.

Calf Meals.

Very few instances came under notice of the sale of those proprietary calf meals which were in past years extensively sold at excessive prices by travelling agents, especially in the more remote parts of the country. The disappearance of these inferior and costly articles may be attributed to the extensive circulation of the Department's Leaflet No. 54, and to the warning posters displayed by the Department throughout the country. The Itinerant Instructors also availed of every opportunity in the course of their lectures and visits to advise farmers against the purchase of such meals, and recommended the use of a simple calf meal (such as that described in the above-mentioned Leaflet) which can be obtained locally, or prepared at home from the raw materials, at a fraction of the price asked for some proprietary articles. In many cases farmers, acting on the advice of the Department, refused to pay the full prices charged for the latter on the grounds that at the time of booking the orders the firm's travelling agent misrepresented the true value of the stuffs. The amounts offered by the purchasers as being the fair value were generally accepted by the manufacturers in full discharge of the debts. In some cases legal proceedings for the recovery of the full amounts charged were instituted by the vendors, but, on hearing the evidence given by the Department's Inspectors and Analyst as to the inferior quality and exorbitant prices of these preparations, judgment was almost invariably given for the defendants with costs. The difficulty thus experienced in the collection of their accounts, together with the publicity given in the course of these trials to their methods and to the true value of their products, have apparently resulted in the withdrawal, which it is hoped will be permanent, of these firms from the Irish market.

A case might here be mentioned which will serve to illustrate the methods adopted by some of the travelling agents of these firms to push the sale of their wares in this country. During the summer and autumn of 1908 numerous farmers in the more backward parts of the counties Cork and Kerry were visited by an individual who represented himself as having been sent by the Department to sell a very good calf meal recommended by them which, he added, would preserve calves from all sickness and diseases. On the strength of these representations many

farmers were induced, in spite of the exorbitant price asked for the article, to give orders for supplies of it in varying quantities. Finding that their expectations in regard to the meal were not realised, and that their stock did not appear to thrive on it, they complained to the Department and to the Itinerant Instructors. On investigation it was found that the self-styled representative of the Department was a travelling agent for a Liverpool firm trading in feeding stuffs, and had never had any connection whatever with the Department. The case was at once put in the hands of the police and the offender, who had sought to escape detection by taking employment as a farm labourer, was arrested and put forward at Castletownberehaven Petty Sessions on a charge of obtaining money by false pretences. On the hearing of the case he was returned for trial at the Winter Assizes, and bail not being forthcoming was confined in jail for the intervening six weeks. He was however acquitted on the case being tried at Cork.

The Department are at present having inquiries made with a view to ascertaining the names and addresses of all firms and traders who prepare and stock the calf meal recommended in Leaflet No. 54. When this information is complete the question of publishing a list containing these particulars for distribution throughout the country will be considered by the Department, as, from inquiries received by them and by the Agricultural Instructors, it is evident that there is at present a large and increasing demand for some guide of this description. A number of samples of calf meals sold as having been made according to their recommendation were examined by the Department during the year, and in any cases where the samples showed that the ingredients had not been mixed in the proportions specified, or that the materials employed were not of the pure description recommended, the vendors were communicated with and requested to exercise greater care in the preparation of the meal. More serious notice will be taken in the future of any instances of this nature.

Linseed Meals.

In the course of their investigations into the state of the trade in linseed meals and linseed cake meals in the previous year the Department found that of the samples taken for analysis about 40 per cent. only could be described as commercially pure, the remainder being more or less adulterated with weed seeds and other objectionable substances. Complaints were also received from farmers, particularly in the North of Ireland, as to cases of sickness and death occurring amongst calves, which they attributed to the use of impure linseed meal for feeding purposes. A strict watch was accordingly kept by the Department's officers on all consignments of these feeding stuffs which were imported into or sold in the country during the past season, and numerous samples were taken and tested.

Early in January of the present year the Department ascertained that a large consignment of linseed cake meal, manufactured in America, was on its way to Belfast. Arrangements were made to have a quantity of the stuff purchased on behalf

of the Department from the wholesale agents immediately on its arrival in this country. Samples were taken from this lot in accordance with the Regulations and were analysed by the Department's Analyst and by the Chief Analyst. Both reports stated that the meal was adulterated with seeds foreign to linseed, some of which contained a glucoside, which, on the addition of water, generated hydrocyanic or prussic acid. The Chief Analyst certified that at least 25 per cent. of the meal was composed of ground seeds (mainly weed) foreign to linseed, and estimated that the amount of hydrocyanic acid generated on the addition of water was '026 per cent. Proceedings were instituted under the Act against the vendors at the instance of the Department, but on the hearing of the case at Belfast, in May last, it was held by the Bench that the fact of the Department not having formally given their consent before the institution of proceedings on their own behalf was a fatal objection, and the case was dismissed. The Department, however, have had a case stated for hearing before the High Court of Justice, King's Bench Division.

About the same time a firm of merchants in Londonderry ordered from a Belfast agent a large quantity of linseed cake meal for retail purposes. Having suspicions of the quality of the meal supplied they gave the vendor notice of their intention to take samples in accordance with the Act and the Regulations made thereunder. At the time of sampling the vendor's representative claimed two of the three parts into which the sample was divided, and the purchasers, not being conversant with the provisions of the Act, permitted him to take away the two portions. The remaining portion was by error sent to the County Analyst instead of to the County Borough Analyst of Londonderry. The Department, on inquiring into the case and noting these irregularities, were unable to consent to the institution of proceedings under the Fertilisers and Feeding Stuffs Act, but they suggested that the purchasers should take an action at common law against the vendor for breach of contract, the material supplied not having been linseed cake meal, but a mixture of that commodity and various adulterants amounting in all to about 20 per cent of the bulk. This suggestion was adopted, and on the hearing of the case at Belfast a decree was given for the plaintiffs for £25 and £1 ls. analyst's expenses.

VII.—INVOICES.

One of the most important sections of the Act is that dealing with the giving of invoices in connection with the sale of fertilisers and feeding stuffs. By it every person who sells for use as a fertiliser of the soil any article which has been subjected to any artificial process in the United Kingdom, or which has been imported from abroad, is required to give to the purchaser an invoice stating the name of the article and the percentages (if any) of nitrogen, soluble phosphates, insoluble phosphates, and potash contained in the article. In the case of feeding stuffs the prescribed invoice must state the name of the article, and whether it has been prepared from one substance or seed, or from more than

one substance or seed, and in the case of any article prepared otherwise than by being mixed, broken, ground or chopped, the respective percentages (if any) of oil and albuminoids contained in the article.

By this invoice a farmer is enabled to assure himself that the goods delivered are similarly described to those ordered, and can, in the case of fertilisers, calculate from the percentages stated the true commercial value of the article in accordance with a standard scale of unit values. The invoice has effect as a warranty by the seller that the actual percentages do not differ from those stated in the invoice beyond the prescribed limits of error.

In regard to the sale of fertilisers during the season 1908-9 it was found that the requirement as to the giving of the prescribed invoice was generally complied with. This was not the case with the feeding stuffs. In many quarters a strong inclination to avoid the responsibility undertaken thereby was manifested, and the exemption granted in the case of stuffs prepared merely by being mixed, broken, ground or chopped, was made to apply to many foods to which, in the opinion of the Department, it was never intended to apply. Thus, articles containing linseed cake meal were by some manufacturers and vendors treated as coming within the scope of this exemption, notwithstanding the fact that in the manufacture of linseed cake and cake meal a portion of the oil of the seed is extracted and that they cannot therefore be considered to be prepared by the simple process of mixing, breaking, grinding or chopping. In other instances the exemption was extended without any justification to cover cases of feeding stuffs which had been prepared by being cooked.

As a certain amount of misunderstanding appeared to exist in regard to the application of this Section of the Act, the Department have sought to remove it through the medium of the Agricultural Instructors and by the circulation among manufacturers and traders of leaflets and memoranda on the subject. A large amount of direct correspondence with manufacturing and trading firms, who were found not to be complying with these requirements, was also entered into by the Department during the past year, and in most cases these firms readily undertook to fulfil their obligations in this respect in the future.

The time has now come when the Department must employ stronger methods to enforce in all cases strict compliance with the very necessary requirements of this section of the Act, and they will in future take serious notice of any instances that come before them of failure on the part of manufacturers and vendors to give the prescribed invoice in connection with the sale, however small the quantity, of either fertilisers or feeding stuffs. In this connection they would again direct the attention of all interested in this trade to the heavy penalties prescribed in Section 6 of the Act for breach of duty by the seller in this respect.

In one instance during the past year, where the Department were satisfied that the failure on the part of a large English

manufacturing firm to give the prescribed invoice in connection with the sale of a calf meal was intended to cover the disposal, at an excessive price, of an article of an inferior quality, they instituted proceedings in England, with the result that the defendants were fined £10 and £4 4s. 0d. costs.

It was observed that several manufacturers and vendors of artificial manures and feeding stuffs were in the habit of issuing invoices which gave vague approximate guarantees as to the percentages of fertilising or nutritive ingredients contained in their products. A feeding stuff would, for example, be guaranteed to contain $2\frac{1}{2}$ to 7 per cent. of oil, and $5\frac{1}{2}$ to 11 of albuminoids. As advantage would also in such cases be taken of the limits of error provided for in the Regulations it will be seen that a guarantee of such a nature is utterly worthless, not to say misleading, to the purchaser. The Department communicated with all firms whom they found to be evading their obligations in this manner, and pointed out that the Act required a statement of the actual and not the approximate percentage of such ingredients. A strict watch will in future be kept for any further instances of this kind.

Another method of avoiding the responsibility incurred by the giving of a proper invoice came under notice. A firm of manure manufacturers issued invoices, on the back of which was printed a statement of the percentages of nitrogen, soluble, and insoluble phosphates contained in the various manures manufactured by them. The figures given in each case were remarkably low, but in order evidently to allay any suspicions on the part of the purchaser as to the price being excessive, a special note was printed suggesting that the manures in question contained double the guaranteed ingredients. As documents of this kind are calculated to mislead purchasers as to the value of the articles to which they refer, the Department wrote to this effect to the firm, and further pointed out that the Act requires a statement of the actual percentages, so far as they can reasonably be ascertained. The result of the Department's intervention was that the special note referred to was omitted from all invoices issued subsequently by the firm in question.

A number of inquiries from manufacturers and traders as to their obligations in regard to the giving of invoices, and as to the prescribed form in which they should be issued, were received and dealt with. The Department will welcome any further inquiries of this nature from persons engaged in the trade who are in doubt as to the exact nature and extent of the requirements of the Act in this respect, and will always be pleased to afford any information or advice desired in this connection.

DEPARTMENT OF AGRICULTURE
AND TECHNICAL INSTRUCTION FOR IRELAND,
AGRICULTURAL BRANCH,
February, 1910.

APPENDICES.

FERTILISERS AND FEEDING STUFFS ACT, 1906.

RETURN showing the names and addresses of the Agricultural Analysts under the above Act in each County and County Borough in Ireland, and giving particulars of arrangements existing in some Counties whereby farmers and other residents in the County can have samples of manures and feeding stuffs analysed at a reduced fee.

County.	Name and Address of Analyst.	Special rates which have been notified to the Department at which samples of manures and feeding stuffs are tested for residents in each county.
Antrim, .	Robert Barklie, F.C.S., 25, Fountain Street, Belfast.	Nil.
Armagh, .	J. Harold Totton, B. Sc., A.I.C. 76, Scottish Temperance Buildings, Donegall Street, S. Belfast.	Fertilisers and feeding stuffs at 2/6 per sample.
Carlow, .	Sir Charles A. Cameron, Castle street, Dublin.	Fertilisers and feeding stuffs at 3/6 per sample.
Cavan, .	Do., do., do.	Guano and superphosphate, 5/-; potash, 5/-; feed-stuff, 5/- per sample.
Clare, .	Do., do., do.	Nil.
Cork, .	D. J. O'Mahony, F.C.S., City Hall, Cork.	Nil.
Donegal, .	Robert Barklie, F.C.S., 25, Fountain Street, Belfast.	Fertilisers and feeding stuffs 5/- per sample.
Down, .	Sir Chas. A. Cameron, Castle Street, Dublin.	Fertilisers, 2/6 per sample (2/6 extra for determination of potash); feeding stuffs, 2/6 per sample.
Dublin, .	Do., do., do.	Nil.
Fermanagh, .	Do., do., do.	Fertilisers and feeding stuffs tested free.
Galway, .	Do., do., do.	Nil.
Kerry, .	D. J. O'Mahony, F.C.S., City Hall, Cork.	Fertilisers and feeding stuffs 2/6 per sample.
Kildare, .	Sir Chas. A. Cameron, Castle Street, Dublin.	Do., do., do.
Kilkenny, .	Do., do., do.	Nil.
King's, .	D. J. O'Mahony, F.C.S., City Hall, Cork.	Fertilisers and feeding stuffs 2/6 per sample.
Lairim, .	Sir Chas. A. Cameron, Castle Street, Dublin.	Nil.
Limerick, .	Do., do., do.	Fertilisers, 5/- (5/- extra for determination of potash); feeding stuffs, 5/- per sample.
Londonderry, .	Robert Barklie, F.C.S., 25 Fountain Street, Belfast.	Fertilisers and feeding stuffs 2/6 per sample.

RETURN showing the names and addresses of the Agricultural Analysts under the above Act in each County and County Borough in Ireland, and giving particulars of arrangements existing in some Counties, whereby farmers and other residents in the County can have samples of manures and feeding stuffs analysed at a reduced fee—continued.

County.	Name and Address of Analyst.	Special rates which have been notified to the Department at which samples of manures and feeding stuffs are tested for residents in each county.
Longford, .	Charles McMullen, F. I. C., 4, William Street Chambers, Belfast.	Superphosphates, 5/-; compound manures, 10/- feeding stuffs, 7/8 per sample.
Louth, .	Sir Chas. A. Cameron, Castle Street, Dublin.	Fertilisers and feeding stuffs 3/6 per sample.
Mayo, .	Do., do., do.	Nil.
Meath, .	Do., do., do.	Fertilisers and feeding stuffs 2/6 per sample.
Monaghan, .	Do., do., do.	Nil.
Queen's, .	Do., do., do.	Nil.
Roscommon, .	Do., do., do.	Fertilisers and feeding stuffs 2/6 per sample.
Sligo, .	Do., do., do.	Samples of fertilisers and feeding stuffs analysed free.
Tipperary (N.),	Do., do., do.	Fertilisers and feeding stuffs 3/6 per sample.
Tipperary (S.),	Do., do., do.	Fertilisers and feeding stuffs 12/6 per sample.
Tyrone, .	Robert Barklie, F.C.S., 25, Fountain Street, Belfast.	Fertilisers and feeding stuffs 5/- to 7/6 per sample.
Waterford, .	Sir Chas. A. Cameron, Castle Street, Dublin.	Fertilisers and feeding stuffs 2/6 per sample.
Westmeath, .	Do., do., do.	Do., do., do.
Wexford, .	Do., do., do.	Do., do., do.
Wicklow, .	Do., do., do.	Do., do., do.
Co. Borough : Belfast, .	Robert Barklie, F.C.S., 25, Fountain Street, Belfast.	Nil.
Cork, .	D. J. O'Mahony, F.C.S., City Hall, Cork.	..
Dublin, .	Sir Chas. A. Cameron, Castle Street, Dublin.	..
Limerick, .	Do., do., do.	..
Londonderry,	Professor Leebody, Magee College Londonderry.	..

PARTICULARS of the names, addresses and occupations of the persons appointed by the Department to act as Official Samplers under the Fertilisers and Feeding Stuffs Act, 1906.

- J. W. Steen, Agricultural Inspector, 4 Upper Merrion Street, Dublin.
 C. J. McCarthy, do., do., do.
 J. Duncan, Superintendent Agricultural Station, Agricultural Station, Clonsilla.
 W. J. Megaw, Superintendent Agricultural Station, Agricultural Station, Athenry.
 J. Getty, Technical Assistant, 4 Upper Merrion Street, Dublin.
 H. Kennedy, Farm Manager, Munster Institute, Cork.
 P. Taylor, Agricultural Overseer, Stranorlar, Co. Donegal.
 R. Y. Smith, Agricultural Overseer, Quay Cottage, Clifden.
 D. S. Simpson, Agricultural Overseer, Prospect Avenue, Westport.
 G. Doonan, Horticultural Overseer, 4 Upper Merrion Street, Dublin.
 J. Marchbank, Agricultural Instructor (Antrim), Trooper's Lane, Carrickfergus.
 J. Bradshaw, Agricultural Instructor (Armagh), 2 Abboy villas, Armagh.
 J. Kelly, Agricultural Instructor (Carlow), 55, Dublin Street, Carlow.
 T. J. Hanly, Agricultural Instructor (Cavan), Courthouse, Cavan.
 W. Godfrey, Agricultural Instructor (Clare), Courthouse, Ennis.
 J. M. Adams, Agricultural Instructor (Cork, E.), 6 Annabolla terrace, Mallow.
 W. F. Prendergast, Agricultural Instructor (Cork, W.), 1 Lisanska, Western Road, Cork.
 T. Ward, Agricultural Instructor (Donegal), Courthouse, Lifford.
 W. D. Davidson, Agricultural Instructor (Down), 132 University Street, Belfast.
 J. W. McKay, Agricultural Instructor (Dublin), 11 Rutland Square, Dublin.
 W. O. Smyth, Agricultural Instructor (Fermanagh), Cortaloughan, Enniskillen.
 T. Cotter, Agricultural Instructor (Galway), Courthouse, Galway.
 J. Seilly,* Agricultural Instructor (Kerry), Main Street, Cahirciveen.
 T. Wade, Agricultural Instructor (Kildare), Glenville, Naas.
 J. Lucey, Agricultural Instructor (Kilkenny), 29 Patrick Street, Kilkenny.
 D. T. Ritchie, Agricultural Instructor (King's Co.), Central Hotel, Tullamore.
 J. J. O'Sullivan, Agricultural Instructor (Leitrim), High Street, Drumahambo.
 T. Wibberley, Agricultural Instructor (Limrick), Ballinacurna, Limerick.
 D. R. Aiken,* Agricultural Instructor (Londonderry), 6 Union Street, Coleraine.
 W. L. Phair, Agricultural Instructor (Longford), Arms Hotel, Longford.
 A. W. Oldershaw, Agricultural Instructor (Louth), The Crescent, Dundalk.
 J. O'Callaghan, Agricultural Instructor (Mayo), Lower James Street, Claremorris.
 N. Leitch, Agricultural Instructor (Meath), Courthouse, Navan.
 A. Carroth, Agricultural Instructor (Monaghan), Courthouse, Monaghan.
 D. Collins, Agricultural Instructor (Queen's Co.), Courthouse, Maryboro'.
 R. P. Hans, Agricultural Instructor (Roscommon), Tulsic, Castlereagh.
 R. Parker, Agricultural Instructor (Sligo), The Hotel, Easkey, Co. Sligo.
 D. Twomey, Agricultural Instructor (Tipperary, N.), 7 Castle Square, Roscrea.
 C. O'Donovan,* Agricultural Instructor (Tipperary, S.), Courthouse, Clonmel.
 E. S. Daly,* Agricultural Instructor (Tyrone), Courthouse, Omagh.
 M. H. McDonagh, do., do., do.
 J. Johnston,* Agricultural Instructor (Waterford), Adams' Hotel, Waterford.
 M. Horgan, Agricultural Instructor (Westmeath), 16 Greville Street, Mullingar.
 J. J. Brennan, Agricultural Instructor (Wexford), Courthouse, Wexford.
 T. J. Gallagher, do., do., do.
 A. Nolan, Agricultural Instructor (Wicklow), Westmount, Wicklow.
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*Those marked with an asterisk have also been appointed to act as Official Samplers by the County Councils of their respective Counties.

RETURN showing the Number of Samples of Fertilisers and Feeding Stuffs taken by the Agricultural Instructor for each county as Official Sampler during the year ended 30th September, 1900.

County.	Number of Samples Taken.		
	Fertilisers.	Feeding Stuffs.	Total.
Antrim,	3	7	10
Armagh,	4	1	5
Carlow,	1	—	1
Cavan,	2	14	16
Clare,	—	2	2
Cork, E.	5	8	13
„ W.	10	8	18
Donegal,	8	1	9
Down,	4	1	5
Dublin,	9	—	9
Fermanagh,	4	5	9
Galway,	1	—	1
Kerry,	9	2	11
Kildare,	13	9	22
Kilkenny,	8	3	11
King's,	7	9	16
Leitrim,	6	6	12
Limerick,	1	1	2
Londonderry,	26	13	39
Longford,	—	2	2
Louth,	6	8	14
Mayo,	—	—	—
Meath,	7	7	14
Monaghan,	4	3	7
Queen's,	13	5	18
Roscommon,	5	6	11
Sligo,	4	1	5
Tipperary (N.R.),	21	7	28
„ (S.R.),	20	17	37
Tyrone,	17	10	27
Waterford,	16	13	29
Westmeath,	3	—	3
Wexford,	29	10	39
Wicklow,	1	1	2
Totals,	267	180	447

DEPARTMENT OF AGRICULTURE AND TECHNICAL INSTRUCTION FOR IRELAND.

AGRICULTURAL BRANCH.

VALUATION OF ARTIFICIAL MANURES.

The following Unit Prices have been fixed by the Department for use in comparing the approximate commercial values of manures this season:—

Nitrogen	14/- per Unit.
Phosphates, soluble in water,	2/- ..
*Phosphates, soluble in Citric Acid; } or }	1/4 ..
Bone Phosphate,	
Potash,	4/6 ..

* No allowance should be made for Insoluble Phosphates unless from Bone. The Unit Value of Citric Soluble Phosphate in Basic Slag is 1s. 9d.

[These Units are based on the retail cash prices of manures in Dublin. When these units are multiplied by the respective percentages, if any, in the analysis of a manure, and 10/- is added for mixing, the result will represent very nearly the cash price of one ton of the manure free on rail at Dublin. To ascertain the corresponding price at any other Port, Railway or Canal Station in Ireland, add the amount shown in the following list.

No one need pay more than these prices, and, in some instances, manures can be bought at something less; especially is this the case where farmers combine to bulk their orders, or where they buy the ingredients and mix for themselves.

STATEMENT showing the amount which must be added to the Price of Manures in Dublin to represent the cost of the same Manures at the following places:—

A.		Per Ton.	B.		Per Ton.	C.		Per Ton.
Abbeydorney .. Rail	8/9		Athboy .. Rail	5/5		Ballinamore .. Rail	8/5	
Abbeydale	11/1		Atheary	8/8		(Donogal).		
Abbeyleix	7/8		Athlone	7/-		Ballinascarty	5/4	
Achill	10/7		" .. Canal	6/8		Ballinascloe	8/-	
Adare	8/10		Athy Rail	5/6		" .. Canal	7/2	
Aghada ex-Steamer	2/6		Attanagh	7/8		Ballinass ex-Steamer	6/3	
Aghadowney .. Rail	5/1		Attymon	9/7		Ballinacollig .. Rail	3/1	
Aghalee .. Canal	3/8		Aughor	7/10		Ballinderry	3/4	
Aldergrove .. Rail	4/2		Aughnacloy	7/6		Ballindine	10/10	
Annaghmore	5/1		Aughrist (Wicklow) ..	4/8		Ballineen	6/-	
Antrim	3/8		Annascall	10/4		Ballinglen	5/5	
Ardagh	9/10		Aylward's Town ..	3/4		Ballingrane	9/4	
Ardara Road	9/11					Ballinaghassig	3/2	
Ardee	4/5					Ballinlough	10/2	
Ardfert	8/4		Bagnalstown .. Rail	7/9		Ballinrobe	10/9	
Ardglass	3/9		" .. Canal	7/9		Ballintogher	8/10	
Ardrahan	10/9		Balbriggan .. Rail	3/9		Ballintra	5/8	
Ardsoilus	9/5		Bella	9/8		Ballybay	5/8	
Arigna	10/9		Ballaghaderreen ..	10/3		Ballybeg	5/3	
Arklow	3/6		Ballina	6/3		Ballybofey	7/4	
Armagh	5/3		Ballinabinch	11/8		(Stranorlar).		
Armoyle	6/5		(Co. Galway).			Ballyboley	5/8	
Arva Road	8/6		Ballinamallard ..	8/5		Ballybrophy	6/4	
Askaton	8/10		Ballinamore	10/-		Ballytrunion	8/9	

	Per Ton.		Per Ton.		Per Ton.
Ballyear .. Rail	9/10	Beragh .. Rail	7/2	Castlederg .. Rail	7/-
Ballycarry .. "	3/8	Bessbrook .. "	4/9	Castlesn .. "	5/1
Ballycastle .. "	5/-	Birdhill .. "	9/7	Castlegregory .. "	9/9
(Astrim) .. "		Blackbrook (Cork) .. "	3/2	Castlegregory June .. "	9/-
Ballyclare .. "	2/4	Blackwatertown Canal	5/6	Castlegrove .. "	11/-
Ballyclare June .. "	2/11	Blarney .. Rail	2/10	Castliland .. "	9/3
Ballyconnell .. "	9/5	Blessington by Tram	3/4	Castlmaine .. "	10/-
Ballycollins .. "	4/6	Boher .. Rail	9/1	Castlereagh .. "	9/10
Ballycumber .. "	7/4	Borris .. "	7/-	Castlrook .. "	4/9
Ballydehob .. "	8/7	Boyle .. "	9/6	Castletown .. "	6/10
Ballyduff (Cork) .. "	6/6	Bray .. "	2/4	Castletownberehaven	
Ballygawley .. "	7/7	Bridge End .. "	3/2	ex-Steamer	7/6
Ballyglunin .. "	9/11	Bridgetown (D'gal) .. "	8/9	Castletownroche Rail	6/-
Ballygowan .. "	2/3	Bridgetown (W'ford) .. "	5/4	Castlewellan .. "	5/3
Ballyhack ex-Steamer	2/6	Brittas .. "	2/7	Cavan .. "	8/5
Ballyhaise .. Rail	7/11	Brookboro' .. "	8/11	Celbridge .. "	2/10
Ballyhale .. "	4/9	Brookmount .. "	2/10	Chapel .. "	4/7
Ballyhaunis .. "	10/4	Bruckless .. "	10/4	Charlismont .. Canal	5/3
Ballyhooley .. "	6/2	Brurea .. "	7/4	Charlestown .. Rail	11/-
Ballyiffin .. "	5/9	Bunbeg ex-Steamer	6/3	Charleville .. "	6/10
Ballymagan .. "	4/7	Buncrana .. Rail	4/3	Church Cross .. "	7/10
Ballymagorry .. "	3/10	Bundoran .. "	9/9	Church Hill .. "	6/7
Ballymartle .. "	4/1	Bundoran June .. "	8/3	Clady .. "	4/9
Ballymena .. "	5/-	Burnfoot .. "	3/4	Clara .. "	7/2
Ballymore .. "	9/7	Burtonport .. "	6/6	Clare Castle .. "	7/6
Ballymoney .. "	4/4	Bush .. "	3/10	Claremorris .. "	10/7
Ballymore .. "	9/-	Buttevant .. "	6/1	Clashganny .. Canal	6/-
Ballynahinch .. "	3/11			Clifden .. Rail	10/-
(Co. Down) .. "		C. .. "		Cloghan .. "	7/4
Ballynahinch June .. "	3/2	Cahir .. Rail	7/-	Clogher .. "	8/2
(Co. Down) .. "		Cahiriveen .. "	7/6	Cloghroe .. "	3/2
Ballynashee .. "	7/3	Caledon .. "	6/1	Clonakilty .. "	5/-
Ballynoe .. "	5/3	Cannal .. Canal	5/9	Clonakilty June .. "	5/4
Ballynure .. "	5/8	Camolin .. Rail	6/3	Clodulane .. "	5/11
Ballyragget .. "	7/4	Campilo .. "	3/4	Clones .. "	7/-
Ballyrosey .. "	5/3	Cape Castle .. "	6/7	" .. Canal	7/-
Ballyshannon .. "	7/6	Cappagh .. "	6/4	Clonmany .. Rail	4/11
Ballysodare .. "	7/6	Cappoquin .. "	5/-	Clonmel .. "	4/8
Ballyvary .. "	9/2	Caragh Lake .. "	10/11	Clonsilla .. "	1/8
Ballyward .. "	5/3	Carberry .. "	5/3	Cloughjordan .. "	7/10
Ballywillan .. "	7/8	Cargan .. "	9/2	Coachford .. "	4/1
Ballywilliam .. "	5/6	Carlingford .. "	3/9	Coachford June .. "	3/1
Baltimore .. "	7/6	Carlow .. Canal	6/10	Coach (via Money more) .. "	7/2
Baltinaglass .. "	6/-	" .. Rail	7/1	Coalisland .. Rail	6/6
Banagher .. "	7/10	Carndonagh .. "	6/-	" .. Canal	4/9
" .. Canal	7/3	Carriekfergus .. "	2/3	Colbinstown .. Rail	5/5
Banbridge .. Rail	4/2	Carriekhue .. "	3/9	Colebrook .. "	10/10
Bandon .. "	4/11	Carriolmaecross .. "	4/5	Colersine .. "	2/6
Bangor (Down) .. "	2/5	Carrioknoro .. "	7/2	Collooney .. "	7/1
Bansba .. "	7/11	Carriokou-Shannon .. "	8/5	Comber .. "	2/1
Banter .. "	6/6	" .. Canal	8/5	Cookstown .. "	7/2
Bantry .. "	6/3	Carriokou-Suir Rail	4/7	Cookstown June .. "	4/8
Barnagh .. "	10/6	Carrigalino .. "	3/8	Cootehill .. "	6/6
Batterstown .. "	3/4	Carrigaloo .. "	4/-	Corbally .. Canal	3/10
Bawnboy .. "	10/9	Carrigans .. "	3/10	Corbet .. Rail	4/9
Beauparc .. "	4/1	Carrigrohane .. "	2/10	Cork .. "	1/3
Bectivo .. "	4/10	Carrigtrwohill .. "	3/9	Corfin .. "	9/2
Belecoo .. "	12/-	Carrowon .. "	3/10	Courtmaasherry .. "	3/9
Belfast .. "	NA	Carrowmore .. "	9/5	Courtwood .. Canal	5/3
Bellarena .. "	4/11	Cashel .. "	9/7	Craigavad .. Rail	2/1
Belleek .. "	9/9	Cashelnagor .. "	6/6	Cratloe .. "	9/5
Bellurgan .. "	3/10	Castlobar .. "	8/7	Cranghwell .. "	10/1
Belmont .. "	6/6	Castlobellingham .. "	3/7	Cresslough .. "	6/6
" .. Canal	6/-	Castloblayney .. "	4/11	Crew .. "	7/7
Belmullet Steamer	8/9	Castlroekdwell .. "	9/8	Croily .. "	6/6
Belturbet .. Rail	8/4	Castlroconnell .. "	9/-	Crookstown Road .. "	4/2
Bennet's Bridge .. "	5/9	Castledawson .. "	6/3	Croom .. "	8/1

	Per Ton.		Per Ton.		Per Ton.
Kilkenny .. Rail	6/4	Lisnaskea .. Rail	8/1	Mountmellick .. Rail	6/4
Killagan .. "	6/4	Lissole .. "	9/7	" .. Canal	5/10
Killala .. "	7/6	Listowel .. "	10/2	Mountrath .. Rail	7/7
Killalee .. "	10/-	Lixnaw .. "	9/0	Mountshannon Canal	9/8
" .. Canal	9/8	Lombardstown .. "	5/-	Mourne Abbey Rail	4/10
Killarney .. Rail	9/-	Londonderry .. "	1/3	Moyville ex-Steamer	2/6
Killesgh .. "	5/4	Longford .. "	8/-	Moy .. Canal	5/3
Killeshandra .. "	8/9	Loe Bridge .. "	8/10	Moyasta .. Rail	11/-
Killinick .. "	4/8	Loughgilly .. "	5/1	Moycullen .. "	7/10
Killorglin .. "	10/7	Loughmeala .. "	9/11	Muckamore .. "	4/2
Killough .. "	3/9	Loughrea .. "	10/-	Mullaflannaghan .. "	4/-
Killuean .. "	5/11	Lountown .. Canal	4/2	Mullinavatt .. "	3/7
Killumney .. "	3/4	Lucan .. Rail	2/4	Mullingar .. "	6/4
Killurin .. "	4/7	Lurgan .. "	3/8	Mulroy ex-Steamer	6/3
Killybegs .. "	7/6	Lusk .. "	3/2	Multyarnham Rail	0/10
Killygordon .. "	5/9	Luska .. Canal	7/4		
Killysea .. "	5/9			N	
Kilmacow .. "	3/4			Naas .. Rail	3/5
Kilmacrennan .. "	6/10	M		Navan .. "	3/7
Kilmacthomas .. "	4/5	Maam Cross .. Rail	10/9	Nonagh .. "	7/4
Kilmaham Wood .. "	6/4	Maefin June .. "	4/7	Newbliss .. "	6/8
Kilmallock .. "	7/4	Macrine June .. "	5/3	Newbridge .. "	4/2
Kilmeaden .. "	3/7	Macroon .. "	5/2	Newbuildings .. "	3/2
Kilmessan .. "	4/3	Madore .. "	8/2	Newcastle (Down) .. "	3/9
Kilmorna .. "	10/9	Magoney .. "	6/7	Newcastle West .. "	10/1
Kilmurry (Cork) .. "	3/9	" .. Canal	0/1	Newcastle .. "	3/5
Kilmurry (Clare) .. "	12/1	Maghera .. Rail	7/2	(Wicklow).	
Kilrane .. "	3/10	Magherafelt .. "	0/6	Newmarket (Cork) .. "	7/3
Kilrea .. "	5/8	Magheramorne .. "	4/2	Newport (Mayo) .. "	7/6
Kilroot .. "	3/1	Magilligan .. "	5/3	Newport Trench (Canal)	4/2
Kilrush .. "	8/9	Maguiresbridge .. "	8/5	New Ross .. Rail	2/6
Kilsheelan .. "	5/5	Malahide .. "	2/1	Newry .. "	2/6
Kiltimeagh .. "	11/7	Malin Head ex-Steamer	2/6	Newtownards .. "	2/1
Kingscourt .. "	6/5	Mallaranny .. Rail	9/8	Newtownbutler .. "	7/7
Kinsale .. "	3/9	Mallow .. "	5/4	Newtowncunningham	3/10
Kinsale Junction .. "	3/10	Manorcunningham .. "	4/11	Newtownforbes .. "	8/3
Knockanally .. "	6/10	Manorhamilton .. "	10/7	Newtownstewart .. "	5/9
Knockroghery .. "	8/11	Markethill .. "	5/6	Nobber .. "	0/-
Knocklong .. "	8/-	Maryboro' .. "	8/3		
Knockloughrim .. "	6/10	Maynooth .. "	3/-	O	
Kylesmore .. Canal	7/11	Middleton .. "	3/10	Oldcastle .. Rail	7/-
		Middletown .. Canal	0/4	Omagh .. "	6/5
L		(Armagh).		Omear .. "	5/1
Laffan's Bridge Rail	7/-	Millford (Carlow) Rail	7/4	Oola .. "	8/10
Laghey .. "	8/9	" .. Canal	6/9	Oranmore .. "	7/7
Lanesborough Canal	7/11	Millford ex-Steamer	6/3	Oughterard .. "	9/3
Larne .. Rail	3/9	(Donegal).		Ovoos .. "	4/2
Laureestown .. "	4/7	Millstreet .. Rail	7/3		
Laytown .. "	3/7	Milltown (Tuam) .. "	10/6	P	
Leighlinbridge .. "	7/7	Milltown-Malbey .. "	12/2	Palace East .. Rail	3/5
Leitrim .. "	5/3	Mitchelstown .. "	6/9	Pallas .. "	9/3
Leixlip .. "	2/6	Moate .. "	7/6	Parkmore .. "	7/10
Letterkenny .. "	5/6	Mogeely .. "	4/5	Parsonstown .. "	7/4
Levittstown .. Canal	6/1	Mohill .. "	9/-	Passage West .. "	3/7
Leyn y .. Rail	9/3	Moirs .. "	3/4	Patrikswell .. "	8/6
Limavady .. "	4/7	" .. Canal	3/2	Peake .. "	3/10
Limavady Juno. .. "	4/2	Molishiffe .. Rail	9/4	Pettigo .. "	9/4
Limerick .. "	6/3	Monaghan .. "	6/3	Philipstown .. Canal	5/10
Limerick Juno. .. "	7/7	" .. Canal	6/3	Pluck .. Rail	5/4
Lisbellaw .. "	8/7	Monaghan Road Rail	6/2	Pomeroy .. "	6/8
Lisburn .. "	1/10	Monasterevan .. "	4/9	Portadown .. "	3/8
Lisecooley .. "	5/5	Moneymore .. "	7/1	Portarlinton .. "	5/-
Lisduff .. "	8/8	Monkstown (Cork) .. "	3/9	Portshall .. "	4/1
Lisdon .. "	13/2	Moorefields .. "	7/11	Portrush .. "	2/6
Lisnare .. "	6/11	Morley's Bridge .. "	9/4	Portsalon ex-Steamer	6/3
Lisnagry .. "	9/1	Mountain Stage .. "	11/5	Portstewart .. "	4/3
		Mountcharles .. "	7/6	Portumna .. Canal	8/2

	Per Ton.		Per Ton.		Per Ton.
Poullaphuca .. Tram	3/10	Saintfield .. Rail	2/7	Tower Bridge .. Rail	2/10
Poyntzpass .. Rail	5/1	St. Johnston .. "	3/4	Traloe .. "	6/3
		St. Mullins .. Canal	5/5	Tramore .. "	3/3
Q		Sallins .. Rail	3/5	Trew & Moy .. "	3/6
Queenstown .. Rail	3/9	Sallybrook .. "	4/10	Trillick .. "	8/1
Queenstown Juno. .. "	3/5	Seariff .. Canal	9/5	Trim .. "	4/11
Quin & Ardara .. "	9/5	Scarva .. Rail	5/3	Tuam .. "	10/5
Quilty .. "	12/3	Sehull .. "	7/6	Tubber .. "	10/7
		Shankill .. "	2/4	Tubbercurry .. "	9/5
R		Shannon Bridge Canal	7/11	Tullamore .. "	5/10
Rafleen .. Rail	3/8	Shannon Harbour .. "	6/4	Tullow .. Canal	5/7
Rahan .. Canal	6/4	Shillelagh .. Rail	6/-	Tully .. Rail	7/1
Ramelton ex-Steamer	6/-	Shinnells .. "	4/11	Tullymurry .. "	3/9
Randalstown .. Rail	4/9	Sixmilebridge .. "	9/4	Tynan .. "	6/1
Rathangan .. Canal	5/3	Sixmilecross .. "	7/4	" .. Canal	5/9
Rathdrum .. Rail	3/1	Skerries .. "	3/8		
Rathfriland .. "	4/1	Skibbereen .. "	6/3	U	
Rathfriland .. "	8/8	Sligo .. "	6/3	Upperlands .. Rail	7/2
Rathkeale .. "	9/6	Smithborough .. "	7/6	Upton .. "	4/1
Rathmore .. "	7/11	" .. Canal	7/4		
Rathmullan ex-Steamer	6/3	Spa .. Rail	8/6	V	
Rathnew .. Rail	3/2	Sparrowsland Sdg. .. "	4/7	Valentia Harbour Rail	7/6
Rathvilly .. "	6/4	Staffordstown .. "	5/5	Vernersbridge .. "	5/3
Recess .. "	11/7	Stewartstown .. "	6/4	Vicarsstown .. Canal	6/-
Redhills .. "	7/11	Strabane .. "	3/4	Victoria Bridge Rail	5/2
Retreat .. "	9/9	Stranocum .. "	5/11	Virginia Road .. "	6/6
Rhoda Bridge Canal	4/-	Stranorlar .. "	6/-		
Rich Hill .. Rail	5/1	Streamstown .. "	7/2	W	
Ringaskiddy .. "	4/-	Swinford .. "	11/6	Warrenpoint .. Rail	3/9
Robertstown .. Canal	4/2			Waterfall .. "	3/2
Rochestown .. Rail	3/2	T		Waterford .. "	1/3
Rockcorry .. "	6/2	Tallaght .. Tram	1/1	Wellington Bridge .. "	5/-
Rooskey .. Canal	6/10	Tallow Road .. Rail	4/10	Westport .. "	6/3
Roscommon .. Rail	9/4	Tandragee .. "	4/6	Westport Quay .. "	6/3
Roscrea .. "	8/5	Tarbert ex-Steamer	8/9	Wexford .. "	2/6
Ross .. "	8/10	Templemore .. Rail	6/4	Whiteabbey .. "	1/11
Rosslare .. "	3/9	Templepatrick .. "	3/8	Whitehead .. "	3/6
Rossmore .. Canal	7/11	The Lamb .. Tram	2/7	Wicklow .. "	1/3
Rossmore .. Rail	10/-	Thomastown .. Rail	5/4	Wilkinson .. "	5/6
Rush and Lusk .. "	3/2	Thurles .. "	6/10	Woodenbridge .. "	4/10
Rushbrook .. "	4/1	Timoleague .. "	4/7	Woodlawn .. "	9/4
		Tinahely .. "	5/5		
S		Tipperary .. "	8/3	Y	
S. Anne's .. Rail	2/10	Toome Bridge .. "	5/9	Youghal .. Rail	3/9

The following are examples showing how manures may be valued by means of the Unit Prices given in these pages :-

1. Suppose the manure is guaranteed to contain "2.75 per cent. Nitrogen 15 per cent. Soluble Phosphates, 5 per cent. Potash," its value at Naas would be reckoned thus :-

			£	s.	d.
Nitrogen,	2.75 per cent.	@ 14/- per Unit,	=	1	18 6
Soluble Phosphates,	15 ..	@ 2/- ..	=	1	10 9
Potash,	5 ..	@ 4/6 ..	=	1	2 6
Allowance for Mixing,	=	0	10 0
Special Allowance for Naas (see Statement)			=	0	3 5
Value per ton at Naas,			£5	4	5

2. Suppose the guaranteed analysis is "7 per cent. Citric Soluble Phosphates, 1.45 per cent. Nitrogen," the value of the manure at Macroom would be reckoned thus:—

	£	s.	d.
Citric Soluble Phosphates, 7 per cent. @ 1/4 per Unit	=	0	9 4
Nitrogen, 1.45 " @ 14/- "	=	1	0 4
Allowance for Mixing, " " " "	=	0	10 0
Special Allowance for Macroom (see Statement)	=	0	5 2
Value per ton at Macroom, " " "	£2	4	10

Farmers are advised to consult their County Agricultural Instructor before buying any manure if they are in doubt as to its value.

February, 1909.

DEPARTMENT OF AGRICULTURE AND
TECHNICAL INSTRUCTION FOR IRELAND,
UPPER MERRION STREET, DUBLIN,
1st February, 1909.

ARTIFICIAL MANURES.

SIR,

I have to inform you that the Department desire to direct attention to certain important considerations affecting all those engaged in the retail of artificial manures. It is not sufficiently known that during the last eight years there has been carried out in every county in Ireland a large number of experiments with various mixtures of artificial manures applied to the principal farm crops. These experiments, though not completed, have now yielded results sufficiently definite to be of the greatest importance to farmers, and it is the desire of the Department that dealers in fertilisers should make the fullest use of this information for their own benefit as well as for that of their customers.

The Department took over three hundred samples of manures from various parts of Ireland during 1908, and, compared with mixtures recommended by the Department on the result of their experiments, many of these manures were of very low quality, and, consequently, very costly. While the Department do not wish to favour any one class more than another, it is but fair to state that the mixtures prepared and sold by the Irish manufacturers were on the whole much more satisfactory than many imported from other countries. Pressure was in several instances brought to bear upon the Department to take action where manures sold were of very low quality, but they have refrained from doing so, believing that local dealers were often acting in complete ignorance of the quality of the goods.

The Department would now appeal to all engaged in the trade to give special attention to the subject during the coming year. If any difficulty is experienced in understanding the technicalities involved in the composition and value of manures, dealers and farmers will be taking a perfectly safe course in insisting on being supplied with the mixtures recommended by the Department, which the principal manure manufacturers in Ireland either have already in stock or are prepared to make up.

The Department are prepared, if a sufficient number of local dealers engaged in the manure trade so desire, to arrange for a short course of instruction extending over one week, in which it should be possible for anyone applying himself to the study of the subject to acquire such a knowledge of the composition, use, and methods of valuing manures as would be of the greatest assistance to him in the conduct of his business.

Enclosed is a memorandum giving particulars of the mixtures which the Department at present recommend on the results of the numerous experiments referred to above. The Department urge upon local dealers to help them and the country by insisting on being supplied with manures manufactured in accordance with these formulae.

The work of the Agricultural Instructors employed by the Department and the County Committees has brought about a substantial increase in the use of artificial manures, greatly to the benefit of agriculture; but farmers, if they are supplied with a second-rate article at a high price, will, sooner or later, cease to appreciate the benefits resulting from the use of artificial manures, and much of the ground gained in recent years will be lost, both to agriculture and to the artificial manure trade.

The Department deem it also a duty to call the attention of local dealers in manures to the provision in the Fertilisers and Feeding Stuffs Act, directing that invoices shall be given with all manures on which are stated the percentages, if any, of the following ingredients:—

Nitrogen.
Soluble Phosphates.
Insoluble Phosphates.
Potash.

This provision has been too often disregarded. Inspectors will again be sent round this year to take samples, for the information of the Department, with a view to ascertaining the quality and source of the manures sold locally, and instructions will be given to see that invoices are duly supplied in accordance with the Act. Where this requirement is not complied with, action may be taken against the offenders. In this connection it may be stated that in a case last year in which the Department instituted proceedings for failure to give an invoice the defendants were fined £10, and four guineas costs.

I am,

Your obedient Servant,

T. P. GILL,
Secretary.

To the Person or firm named in the address.

MEMORANDUM.

MANURES RECOMMENDED BY THE DEPARTMENT FOR THE VARIOUS FARM CROPS.

OATS OR BARLEY.

A mixture of:—

1 part of Sulphate of Ammonia	{ which forms a complete manure, having an analysis of	2.75% Nitrogen.
3 parts of Superphosphate (35%)		15.00% Soluble Phosphates.
3 parts of kainit		5.00% Potash.

To be applied at the rate of 5 cwt. per statute acre.

POTATOES.

A mixture of:—

1 part of Sulphate of Ammonia	{ which forms a complete manure, having an analysis of	3.25% Nitrogen
4 parts of Superphosphate (35%)		23.00% Soluble Phosphates
1 part of Muriate of Potash		8.00% Potash.

To be applied at the rate of 5 cwt. per statute acre, along with 15 tons dung.

TURNIPS.

Where a fair quantity of dung of good quality is available it will usually be found sufficient to use along with it 4 or 5 cwt. per statute acre of 35 Superphosphate.

Where the amount of dung is very limited the following mixture should be applied to this crop at the rate of 5 to 6 cwt. per statute acre.

1 part of Sulphate of Ammonia	which forms a complete manure, having an analysis of	2.5% Nitrogen
4 parts of Superphosphate (35%)		17.5% Soluble Phosphates
3 parts of Kainit		4.5% Potash

MEADOW HAY.

A mixture of:—

1 part of Nitrate of Soda	which forms a complete mixture, having an analysis of	3.0% Nitrogen
2 parts of Superphosphate (35%)		14.0% Soluble Phosphates
2 parts of Kainit		4.0% Potash

To be applied at the rate of 4 or 5 cwt. per statute acre.

As these manures (meadow hay mixture) must not be allowed to stand after being mixed together, Agents and Farmers must get the ingredients separately. The manures must then be mixed on the farm and applied to the meadow the same day.

February, 1909.

[POSTER.]

DEPARTMENT OF AGRICULTURE AND TECHNICAL
INSTRUCTION FOR IRELAND.

BASIC SLAG.

FARMERS

ARE

WARNED

THAT

INFERIOR SLAGS

ARE NOW BEING

SOLD IN IRELAND.

BUY BEST BRANDS ONLY.

READ LEAFLET 22,

Which can be had FREE on application to
The Secretary, Department of Agriculture and
Technical Instruction for Ireland,
Upper Merrion Street, Dublin.

RETURN giving particulars of a representative selection of Samples of Fertilisers analysed by the Department during the year ended 30th September, 1909.

Description of Fertiliser and County in which sample was drawn.	G—Yielder's guarantee A—Result of Analysis.	Phosphates.			Nitrogen.	Potash.	Fluorine.	Observations.		
		Water Soluble.	Calcio Soluble.	Insoluble.						
								P—Price charged. V—Commercial value.		
<i>Basic Slag.</i>	G	—	34	—	—	—	80	P	2 3 0	High grade. Price reasonable.
Leitrim.	A	—	36.38	—	—	—	74.5	V	3 14 0	
Cork.	G	—	7.5	—	—	—	85	P	1 10 0	Very low grade. Practically worthless.
	A	—	5.0	—	—	—	84	V	0 11 7	
Limerick.	G	—	33.4	—	—	—	85	P	3 15 0	High grade. Cheap.
	A	—	37.68	—	—	—	93.6	V	3 17 4	
Kerry.	G	—	58	—	—	—	80.0	P	2 17 6	Medium grade slightly below guarantee.
	A	—	26.91	—	—	—	87.5	V	2 14 7	
Kerry.	G	—	28	—	—	—	80	P	2 15 0	Medium grade.
	A	—	27.99	—	—	—	83	V	2 15 3	
<i>Superphosphate.</i>	G	30	—	—	—	—	—	P	3 0 7	Good sample.
Galway.	A	33.4	—	—	—	—	—	V	3 13 6	
Tipperary, N.R.	G	35	—	—	—	—	—	P	3 15 0	Seriously below guarantee.
	A	25.03	—	—	—	—	—	V	2 19 1	
<i>Nitrated Superphosphate.</i>	G	17	—	4	3	—	—	P	5 10 3	Rather expensive.
Carlow.	A	16.23	—	9.05	3.15	—	—	V	4 4 3	
<i>Sulphate of Ammonia.</i>	G	—	—	—	10.75	—	—	P	12 7 6	Good sample.
Cork.	A	—	—	—	20.36	—	—	V	14 6 3	
Galway.	G	—	—	—	10.75	—	—	P	12 10 0	Do.
	A	—	—	—	20.7	—	—	V	14 8 0	
<i>Potato Manure.</i>	G	18	—	2	7.4	4	—	P	9 0 0	Soluble high-class compound.
Cork.	A	18.11	—	1.06	7.33	4.05	—	V	8 11 10	
Waterford.	G	16	—	8	1.85	1.75	—	P	4 15 0	Potash content low for potatoes, therefore unsuitable for this crop. Price excessive.
	A	10.41	—	0.63	1.75	.83	—	V	4 1 6	
Leitrim.	G	23	—	—	3.25	8	—	P	7 0 0	Good sample of mixture recommended by Department for potatoes. Price reasonable.
	A	23.6	—	1.65	3.43	8.00	—	V	7 12 2	
King's.	G	15	—	3	3.29	1.80	—	P	6 0 0	Not specially suited for potato crop. Price excessive.
	A	16.38	—	2.33	3.6	1.75	—	V	5 4 4	
Galway.	G	23	—	—	3.25	8	—	P	6 10 0	Mixture is that recommended by Department for potatoes, but sample below guarantee in Soluble Phosphates.
	A	21.23	—	4.63	3.35	8.15	—	V	7 2 3	

RETURN giving particulars of a representative selection of Samples of Fertilisers analysed by the Department during the year ended 30th September, 1909.

Description of Fertiliser and County in which sample was drawn.	G—Vendor's guarantee. A—Result of Analysis.	Phosphates.			Nitrogen.	Potash.	Vincosa.	Observations.		
		Water Soluble.	Clcile Soluble.	Insoluble.						
								P—Price charged. V—Commercial value.		
Potato Manure—contd.										
Tyross, . . .	G	20	—	5	1.03	—	—	P	3 12 0	Contains no potash, therefore not a proper potato compound.
	A	20.08	—	6.73	1.12	—	—	V	3 8 10	
Turnip Manure.										
Mayo, . . .	G	17	—	—	2.4	4	—	P	5 10 3	Mixture recommended by Department. Price reasonable.
	A	16.93	—	2.39	3.15	4.85	—	V	5 10 2	
Dublin, . . .	G	16	—	—	2.47	4.6	—	P	5 3 0	Suitable mixture for turnips. ² / ₃
	A	15.47	—	4.45	2.45	4.75	—	V	5 2 6	
Kildare, . . .	G	17.54	—	7.78	.72	.62	—	P	6 0 0	Price excessive even if of guaranteed standard
	A	18.38	—	10.63	.84	.4	—	V	2 13 9	
Mangel Manure.										
Mayo, . . .	G	12	—	—	3.75	4.75	—	P	5 18 5	Suitable manure for mangels. Price reasonable.
	A	11.31	—	2.83	4.9	3.08	—	V	6 13 3	
Oat and Grass Manure										
Mayo, . . .	G	15	—	—	2.75	5	—	P	5 11 6	Mixture recommended by Department. Price reasonable.
	A	15.8	—	.67	3.57	4.09	—	V	6 3 9	
Sligo, . . .	G	15	—	—	2.75	5	—	P	5 12 0	Good sample. Deficiency in soluble phosphates is more than compensated by excess in other ingredients.
	A	13.8	—	.51	3.33	5.4	—	V	5 14 9	
Barley Fertiliser.										
Louth, . . .	G	12.2	5.11	5.22	1.68	.83	—	P	7 8 6	Price more than double commercial value.
	A	15.08	—	11.08	1.74	.81	—	V	3 12 0	
Disolved Guano.										
Roscommon, . . .	G	18	—	5	6.6	1.68	—	P	8 7 0	Fair sample of Guano.
	A	10.82	—	4.38	6.86	1.92	—	V	7 11 4	
Base Manure Compound.										
Tipperary, S.B., . . .	G	20	—	5	1.03	—	—	P	3 10 0	Good compound.
	A	22.07	—	5.02	1.12	—	—	V	3 14 5	
Base and Meat Compound.										
Kilkenny, . . .	G	—	7	2	1.45	—	—	P	3 17 6	Although well up to guarantee in respect of phosphates, very poor value for the price charged.
	A	10.33	—	4.1	1.4	—	—	V	2 15 7	
Queen's, . . .	G	—	8	—	1.45	—	—	P	3 15 0	Poor quality. Price excessive.
	A	—	8.23	5.73	1.08	—	—	V	2 10 8	
Bar, Blood and Meat Manure.										
Louth, . . .	G	2	—	10	2.5	.5	—	P	3 15 0	Below guarantee in every item. Relatively high priced manure even if up to guarantee.
	A	.63	—	8.1	2.13	.47	—	V	2 3 0	
Manure										
Tipperary, N.B., . . .	G	—	6	—	1.64	—	—	P	4 0 0	Poor quality. Price exorbitant.
	A	—	5.49	—	1.3	—	—	V	2 3 8	

RETURN giving particulars of a representative selection of Samples of Feeding Stuff analysed by the Department during the year ended 30th September, 1909.

Description of Feeding Stuff and County in which sample was drawn.	G = Vendor's guarantee, A = Result of Analysis.	Oil.	Albuminoids.	Prices charged.	Observations.
<i>Crushed Flaxseed.</i>					
Cavan,	A	30-07	—	2/3 per st.	Found on examination to be pure, as guaranteed.
Fermanagh,	A	34-25	27-4	15/- per cwt	
"	A	35-59	21-13	13/6 "	
<i>Colf Meals.</i>					
Leitrim,	A	35-96	19-95	15/- "	Found on examination to have been prepared, as guaranteed, in accordance with the formula given in Department's Leaflet No. 54.
Longford,	—	—	—	2/- per st.	
Kerry,	—	—	—	2/2 "	
Tipperary, S.R.,	—	—	—	12/- per cwt	Poor quality, contains an unusually large amount of fibre (8-93 per cent.)
Cork,	—	—	—	12/- "	
Louth,	G	5-8	24-38	10/- "	
"	A	5-53	21-87	—	Made of damaged materials, dead weavils and ground rice. Not value for quarter price charged
Monaghan,	G	5	15	—	
"	A	8-44	17-93	—	
Tyrone,	G	4-12	25-5	—	Unsuitable for use with separated milk. Price exorbitant.
"	A	3-62	21-43	—	
"	G	3-85	23-62	—	
"	A	1-28	21-87	—	Ditto.
Waterford,	G	5	20	—	
"	A	3-76	20-12	—	
Leitrim,	G	10	20	—	Not suitable as milk substitute. Price excessive.
"	A	14-9	21-87	—	
"	G	9-5	20	—	
Mayo,	A	6-67	21-17	—	Price exorbitant
"	G	5	20	—	
Limerick,	A	4-63	20-60	—	
<i>Leaved Cake Meal.</i>					
Donnegal,	G	6	32	—	Contains about 10 per cent. weed seeds. Poor sample.
"	A	8-91	29-87	—	
Louth,	G	6	32	—	
"	A	8-37	27-75	—	Good sample
<i>Leaved Oil Meal.</i>					
Londonerry,	G	8-25	31-66	—	
"	A	5-63	27-12	—	Below guarantee in oil. Contains 20 per cent. weeds foreign to leaved Very bad sample.
<i>Pig Meal.</i>					
Rosecommon,	G	5	16	—	
"	A	4-33	10-19	—	Price exorbitant for a meal of this composition.

RETURNS giving particulars of a representative selection of Samples of Feeding Stuffs analysed by the Department during the year ended 30th September, 1909.

Description of Feeding Stuff and County in which sample was drawn.	G = Vendor's guarantee A = Result of Analysis.		Oil.	Albuminoids.	Prices charged.	Observations.
<i>Bean Meal,</i>						
Londonderry,	G	1	42	} 27 per ton		Up to guarantee.
	A	1.42	45.02			
<i>Linseed Cake,</i>						
Meath,	G	9	31	} 42 10s. "		Good pure sample.
	A	9.35	34.39			
Tipperary, S.R.,	G	11	30	} 48 15s. "		Oil is not linseed oil.
	A	10.17	33.00			
<i>Cotton Cake.</i>						
Longford,	G	8	40	} 20 "		Very good sample.
	A	10.19	41.64			
Louth,	G	9	40	} 48 10s. "		Good sample.
	A	9.43	40.5			
<i>Soya Cake.</i>						
Meath,	G	6	41	} 26 17s. 6d		Ditto.
	A	6.26	42			
<i>Feeding Cake.</i>						
Sligo,	G	10	20	} 27 15s. "		Up to guarantee within limits of error; but made of damaged materials and sweepings, sweetened with sugar (treacle), and locust beans.
	A	9.3	20.16			
Limerick,	G	10	20	} 48 "		Stale and dirty, largely composed of ground weed seeds.
	A	9.7	19.68			
King's,	G	10	20	} 26 15s. "		Composed of inferior stale materials and weed seeds.
	A	9.37	19.74			
<i>Concentrated Food.</i>						
Mayo,	G	4	12	} 17/6 per cwt		Contains a little salt, sugar, and footmash, some locust beans and pea meal. Consists chiefly of linseed cake meal, rice and rice meal. Keeping properties bad. Contains 6 per cent. bolusmen, a red mineral coloured with ferric oxide. Inferior, and price exorbitant.
	A	8.42	16.17			
<i>Stock Food.</i>						
Tyrone,	G	—	—	} 21 0s 6d. "		
	A	9.2	23.45			
<i>Horse Food.</i>						
Mayo,	G	5	13.5	} 19/- "		Price exorbitant.
	A	7.11	18.48			
<i>Poultry Food.</i>						
Tyrone,	G	—	—	} 21 0s 6d. "		Very inferior. Contains 6 per cent. sand. Price excessive.
	A	9.78	21.87			